

REMARKS/ARGUMENTS

The Applicants originally submitted Claims 1-6 in the application. In a previous response, the Applicants amended Claims 1-5 and added Claims 7-9. In the present response, the Applicants have amended Claims 1, 3 and 7 to correct inadvertent errors. The Applicants have not canceled or added any claims in this response. Accordingly, Claims 1-9 are currently pending in the application.

I. Objection of Claims 1, 3 and 7

The Examiner has objected to Claims 1, 3 and 7 due to informalities. In response, the Applicant has amended Claims 1, 3 and 7 to correct the informalities and place the claims in condition for allowance. Accordingly, the Applicant respectfully requests the Examiner to withdraw the objection of Claims 1, 3 and 7.

II. Rejection of Claims 1, 3-5 and 7-9 under 35 U.S.C. §103

The Examiner has rejected Claims 1, 3-5 and 7-9 under 35 U.S.C. §103(a) as being unpatentable over “Two-Stage Mel-Warped Wiener Filter for Robust Speech Recognition” to Agarwal, *et al.* (hereinafter “Agarwal”) in view of U.S. Patent No. 6,446,038 to Bayya, *et al.* (hereinafter “Bayya”), and further in view of “Low-Bitrate Distributed Speech Recognition for Packet-Based and Wireless Communication” to Bernard, *et al.* (hereinafter “Bernard”). The Applicants respectfully disagree.

The Examiner relies on sections 2.1 and 2.2 of Agarwal to disclose, among other things, calculating time and frequency weighting to get weighting coefficient γ_{tf} , wherein γ_{tf} is a function of $\eta_{t,f}$. (See Final Rejection, pages 3-4.) The cited sections of Agarwal, however, do not appear to

disclose calculating a time and frequency weighting coefficient. On the contrary, in sections 2.1-2.2 Agarwal discloses converting a mel-warped transfer function to a time-domain impulse response and using two-stage filtering. Thus, while Agarwal may disclose converting between a frequency domain and a time domain (*see* section 2.3, lines 7-12), the Applicant fails to see where converting between the two domains teaches or suggests calculating a time and frequency weighting coefficient.

Neither Bayya nor Bernard has been cited to address the above noted deficiency of Agarwal but to disclose other elements of the independent Claims. (*See* Final Rejection, pages 3-6.) For example, the Examiner asserts Agarwal does not teach or suggest multiple elements of Claims 1, 3 and 7 including: computing a weighted spectral distance by applying time and frequency weighting to the spectral distance employing a time-varying diagonal matrix G_t which represents the weighting coefficient γ_{tf} . (*See* Final Rejection, pages 3-5.) To cure this deficiency of Agarwal, the Examiner relies on Bayya. (*See* Final Rejection, page 4, referring to column 3, lines 1-8, and column 3, line 30, to column 4, line 32, of Bayya.)

Bayya relates to objectively evaluating the quality of speech. (*See* column 1, lines 6-8.) Bayya discloses speech samples are transformed into appropriate domains to determine distortion measures. (*See* column 3, lines 30-33.) The Applicant fails to find, however, where the cited sections of Bayya teach or suggest "computing a weighted spectral distance by applying time and frequency weighting to the spectral distance employing a time-varying diagonal matrix G_t which represents the weighting coefficient γ_{tf} " as asserted by the Examiner. On the contrary, while the cited sections of Bayya do disclose several distortion measures including a log spectral distance and weighted slope spectral distance, Bayya fails to teach or suggest that either of the spectral

distances are weighted by applying time and frequency weighting. More specifically, the cited sections of Bayya fail to teach or suggest computing a weighted spectral distance employing a time-varying diagonal matrix G_t that represents a time **and** frequency weighting coefficient. (*See*, for example, equations 2 and 4 in columns 3 and 4 and column 3, lines 30-32 of Bayya.) As such, for at least these reasons, Bayya does not appear to teach or suggest every element for which it has been relied upon.

Bernard has not been cited to cure the above noted deficiencies of Agarwal and Bayya since Bernard is directed to applying a time-varying weight instead of applying time and frequency weighting. (*See* section V, page 575-576.) Accordingly, the cited combination of Agarwal, Bayya and Bernard does not provide a *prima facie* case of obviousness of independent Claims 1, 3 and 7 and Claims dependent thereon. The Applicants therefore respectfully request the Examiner withdraw the 35 U.S.C. §103(a) rejection of Claims 1, 3-5 and 7-9 and allow issuance thereof.

III. Rejection of Claims 2 and 6 under 35 U.S.C. §103

The Examiner has rejected Claims 2 and 6 under 35 U.S.C. §103(a) as being unpatentable over Agarwal in view of Bayya, Bernard and further in view of U.S. Patent No. 6,445,801 to Pastor, *et al.* (hereinafter "Pastor"). The Applicant respectfully disagrees.

As noted above, the cited combination of Agarwal, Bayya and Bernard does not teach or suggest each element of independent Claims 1 and 3. The Applicant fails to find where Pastor cures, or has been cited to cure, these deficiencies of Agarwal, Bayya and Bernard. The Applicant respectfully requests the Examiner to indicate otherwise if the Examiner disagrees.

Thus, in view of independent Claims 1 and 3, the cited combination of Agarwal, Bayya, Bernard and Pastor does not provide a *prima facie* case of obviousness of Claims 1 and 3 and Claims 2 and 6 which depend thereon. The Applicant therefore respectfully requests the Examiner withdraw the 35 U.S.C. §103(a) rejection of Claims 2 and 6 and allow issuance thereof.

IV. Comment on Cited References

The Applicants reserve further review of the references cited but not relied upon if relied upon in the future.

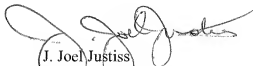
V. Conclusion

In view of the foregoing amendment and remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1-9.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application. The Commissioner is hereby authorized to charge any fees, credits or overpayments to Deposit Account 20-0668.

Respectfully submitted,

HITT GAINES, PC



J. Joel Justiss
Registration No. 48,981

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P.O. Box 832570
Richardson, Texas 75083
(972) 480-8800